

TVII HANDLE CAMERA SYSTEM



SKYTRON

OWNERS MANUAL

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SKYTRON STANDARD LIMITED WARRANTY

SKYTRON, a Division of the KMW Group, Inc. (SKYTRON) warrants all new products sold by it directly or through a dealer or other authorized representative, with exception to replacement parts, spares, bulbs (surgical lights), pads, and accessory items (surgical tables) to be free from defects in material or workmanship, under normal use and service, for a period of two (2) years. This warranty shall include the cost of repair or replacement of defective parts including the cost of service labor and travel time to the site of equipment use. Delays caused by the user in accessing the equipment for repair will be chargeable at the normal hourly rate for service by SKYTRON's authorized service representative. The warranty period shall begin with the initial operation or one (1) year after receipt of the product, whichever shall occur first.

Replacement parts, spares, bulbs (surgical lights), pads and accessory items (surgical tables) are warranted to be free from defects in material or workmanship, under normal use and service, for a period of ninety (90) days from receipt by the ultimate user, with exception to replacement parts supplied by SKYTRON, for products under warranty, which shall be covered for any remaining period of the original product warranty, or for 90 days, whichever is of greater benefit to the ultimate user.

SKYTRON's responsibility and liability shall be limited to the repair or replacement of any part which we, SKYTRON, determine to be defective within the applicable warranty period. Minor adjustments required as a result of normal wear during the use of the product within the warranty period are not covered under warranty. The labor portion of this warranty is covered by SKYTRON's Authorized Service Agent. Repairs made by others are not authorized nor covered by SKYTRON with respect to labor costs.

SKYTRON shall not be liable for any other expense, loss or damage, whether direct, incidental, consequential or exemplary arising in connection with the sale or use of or the inability to use SKYTRON products.

NO EXPRESS WARRANTY IS GIVEN BY SKYTRON WITH RESPECT TO ITS PRODUCTS EXCEPT AS SPECIFICALLY SET FORTH HEREIN. ANY WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE TWO-YEAR AND 90-DAY TERMS SET FORTH ABOVE. THE FOREGOING STATEMENTS OF WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHER REMEDIES.

No dealer, agent, employee or other representative of SKYTRON is authorized to extend or enlarge this warranty.

12/03

Although current at the time of publication, SKYTRON'S policy of continuous development makes this manual subject to change without notice.

MODEL ID
STELLAR SERIES



ST23TV



ST29TV



ST2323TV



ST2923TV



ST29TV23



ST232323TV



ST292323TV



ST29TV2323



ML24TV



ML2424TV



ML242424TV

SPECIAL USER ATTENTION

To help assure the highest degree of operating safety for user and patient, SKYTRON has provided precautionary instructions throughout this manual.

As with the operation of any surgical light, all hospital personnel should be aware that a certain amount of care must be exercised to maintain patient safety and to keep your SKYTRON Surgical Light performing at peak efficiency.

The following is a summary of the important precautionary instructions:

- Connector faceplate may be wall mounted, installed in a cabinet or installed on a Skyboom carrier.

- Make sure Main Power Switch on the light fixture Wall Control is in the OFF position before installing or removing the camera.

- Make sure Camera Assembly is securely locked in lighthead before moving lighthead into use position.

- Sterilizable cover must be removed prior to removing camera.

- Do not attempt to focus or position the lighthead using the camera body. Damage to the camera rotation motor may result.

- Do not push in the Camera Release Button on the Lighthead Attachment Ring above the sterile handle, as this will cause the camera to disengage from the lighthead.

- Refer to Skytron Stellar Series or Millennium Gold Series operators Manual for light fixture operation.

INTRODUCTION

SKYTRON'S TVII Handle Camera System provides high quality video to camera ready (TV Series) lightheads. The Sony single chip camera provides quality levels that are comparable to many 3 chip systems. The system design permits transport from room to room, wherever other TV Series lightheads are available. The camera control unit can be connected to any existing monitor. A convenient wall jack is provided for camera control connection. The TVII system can be used on SKYTRON Stellar series (ST23TV and ST29TV) or Millennium Gold series (ML24TV) camera ready lightheads (ST23TV lighthead shown in this publication). The TV lightheads may be single radial arm mounted, part of a multiple lighthead fixture or combined with a SKYTRON Skyboom on a Central mount fixture,



Figure 1. TVII Handle Camera in ST23TV Lighthead

The TV series lighthead option includes the Camera Ready Lighthead, a counterweight for use when the light is to be operated with the camera removed, a sterilizable camera cover that is used for a positioning/focus handle and a connector face plate with a 50 foot coaxial cable that connects to the camera/light fixture.

The connector faceplate allows a quick connect or disconnect point for the camera control unit. The faceplate is mounted near where the camera con-

trol unit is to be located. It can be wall mounted, installed within a cabinet such as a nurse documentation center or installed on a SKYTRON Skyboom Equipment Carrier. Refer to page 10 for TV system components.

The TVII Handle Camera system consists of the camera, a camera control unit and a control cable. The camera mounts in the center of the lighthead and the sterilizable cover allows sterile positioning and focus control for the lighthead.

INSTALLATION

Camera Installation



CAUTION



Make sure Main Power Switch on the light fixture Wall Control is in the OFF position before installing or removing the camera.

Use the following procedure to install the camera system.



Figure 2.

Move lighthouse to the full down position, and turn the lighthouse so it faces up as shown in figure 2.

Insert the Camera Assembly into the lighthouse attachment ring. Push and twist the camera to lock it into position. Pull out on the camera to verify that it is fully locked into position.



LIGHTHEAD
ATTACHMENT RING

CAMERA RELEASE
BUTTON

Figure 3.



CAUTION



Make sure Camera Assembly is securely locked in lighthouse before moving lighthouse into use position.

Camera Removal

To remove the camera assembly from the lighthouse, hold the camera firmly, and press the camera release button on the lighthouse attachment ring (figure 3). Carefully pull the camera assembly straight out of the attachment ring.

NOTE

Sterilizable cover must be removed prior to removing camera.

Counterweight

The counterweight must be installed to maintain the proper weight required to balance the lighthouse when the camera is not installed.

Install the counterweight in the lighthouse and ensure that it is fully engaged by pulling and slightly turning it. Refer to figure 4.

To remove the counterweight from the lighthouse, hold the counterweight firmly, and press the camera release button on the lighthouse attachment ring (figure 3).

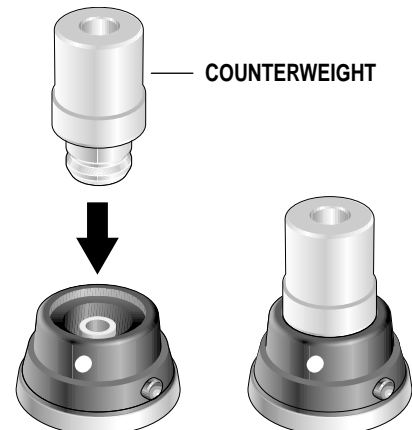


Figure 4. Counterweight

Sterilizable Cover



CAUTION



Do not attempt to focus or position the lighthead using the camera body. Damage to the camera rotation motor may result.



CAUTION



Do not push in the Camera Release Button on the Lighthead Attachment Ring above the sterile handle, as this will cause the camera to disengage from the lighthead.



Figure 5.

Recommended sterilization parameters for the sterilizable cover:

- a. Prevac, 270° F, 4 minutes
- b. Gravity Wrapped, 250° F, 30 minutes
- c. Gravity Flash, 270° F, 3 minutes

Always consult current AORN journal recommendations for proper sterilization procedures.

The camera has a sterilizable cover that, when installed, allows sterile positioning and focus control for the lighthead. There is also a non-sterile focus knob on the lighthead.

To install the sterile cover, align the holes in the cover with the cover locking pins on the camera attachment ring and slide the cover on until it locks on the two pins. See figure 5. To remove the sterile cover, push the two white pins in and remove the sterile cover.

OPERATION

Turn main power switch on at the Wall Control. Adjust the intensity control. The intensity control must be set to at least 20% for the camera to produce a video signal.

The focus of the bulbs within the lighthead can be adjusted by rotating the sterilizable cover or the side focus knob. See figure 6.

NOTE

Refer to Skytron Stellar Series or Millennium Gold Series operators Manual for light fixture operation.



Figure 6.

Camera Control Unit Configuration

1. Attach the Coaxial Cable from the connector on the faceplate to the camera control unit (CCU). See figure 7.

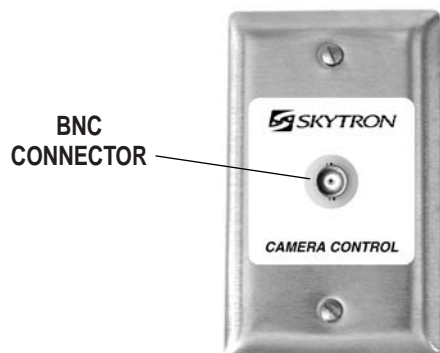


Figure 7. Camera Control Connector Faceplate

2. Connect the video out cable (SVHS or BNC) from the camera control unit to the monitor.
3. Connect the power cord to the CCU and plug into 120 VAC outlet. See figure 8.

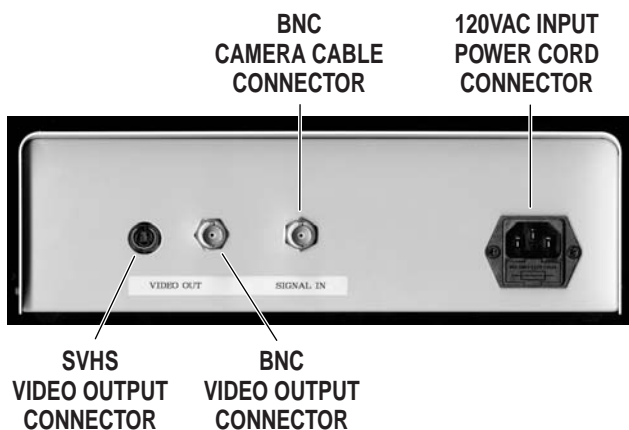


Figure 8. Camera Control Unit, back view

Camera Control Unit

The Camera Control Unit provides controls for camera rotation, manual or automatic adjustment of Iris (Aperture), Zoom and Focus. Refer to figure 9 for control locations.

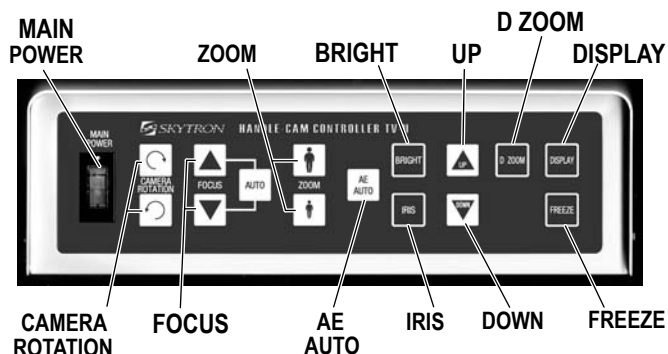









Figure 9. Camera Control Unit, front view

Description of Controls

MAIN POWER Switch - supplies power to the camera and control unit. Switch illuminates (green) when power is ON.

CAMERA ROTATION - allows clockwise and counterclockwise rotation of the camera. Press the  button for clockwise rotation. Press the  for counterclockwise rotation.

FOCUS - controls the focus of the camera lens. When Main Power switch is turned ON the Focus control is set to automatic. To operate the Focus control manually, press the AUTO button. The Focus symbol will display on the monitor when in the manual mode. Press the  or  button as required to obtain proper focus. Pressing the  button sets the focus in the telephoto range. Pressing the  button sets the focus in the wide angle range. Press the AUTO button again to activate the automatic function.

ZOOM - controls the image size. To make the subject larger, press the  button. To make the subject smaller, press the  button.

AE AUTO - allows automatic control of both IRIS and BRIGHT functions.

BRIGHT - adjusts both the gain and iris using an internal algorithm according to a brightness level freely set by the user. Exposure is controlled by gain when dark, and by iris when bright.

IRIS (Aperture) - controls the video signal brightness by opening or closing the iris of the camera to allow more or less light to enter the camera. When Main Power switch is turned ON the Iris control is set to automatic. To operate the Iris control manually, press the AE AUTO button. The "F" stop setting will display on the monitor when in the manual mode. Press the UP button to increase the brightness. Press the DOWN button to decrease the brightness. Press the AE AUTO button again to activate the automatic function.

UP / DOWN - used with IRIS and BRIGHT options.

D ZOOM - controls digital zoom function. When activated, extends zoom ratio from 10X to 40X.

DISPLAY - displays the current iris, zoom and focus settings on the monitor.

FREEZE - press to capture present view "snapshot". Press again to resume normal operation.

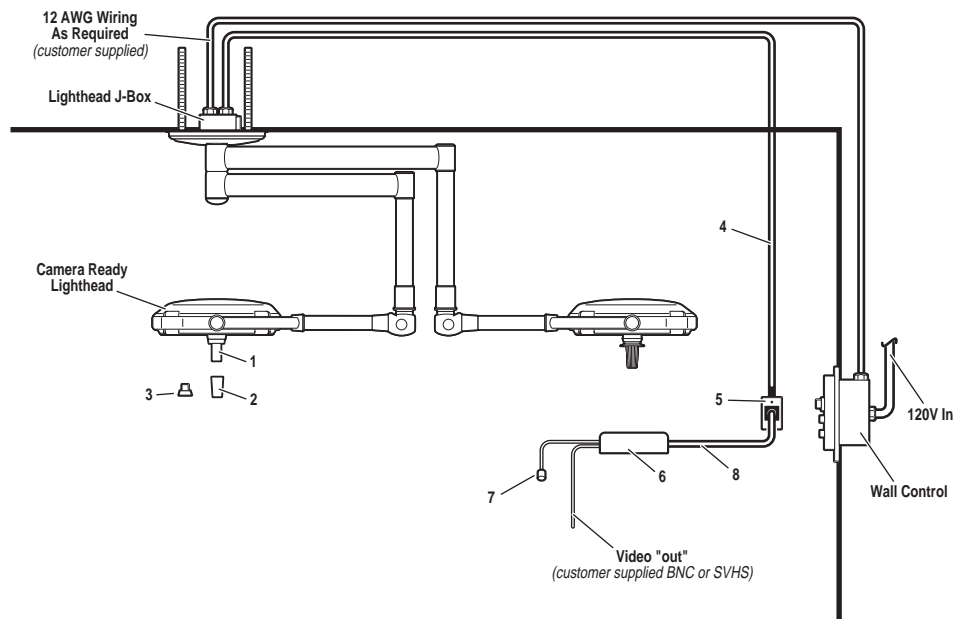
The Handle Camera system consists of a Lighthead handle mounted, super compact color CCD camera with a 10X zoom, high speed auto focus lens. Controls are provided for camera rotation, focus, zoom, Bright - Iris adjustment, digital zoom and freeze. Composite and SVHS outputs are available.

SPECIFICATIONS:

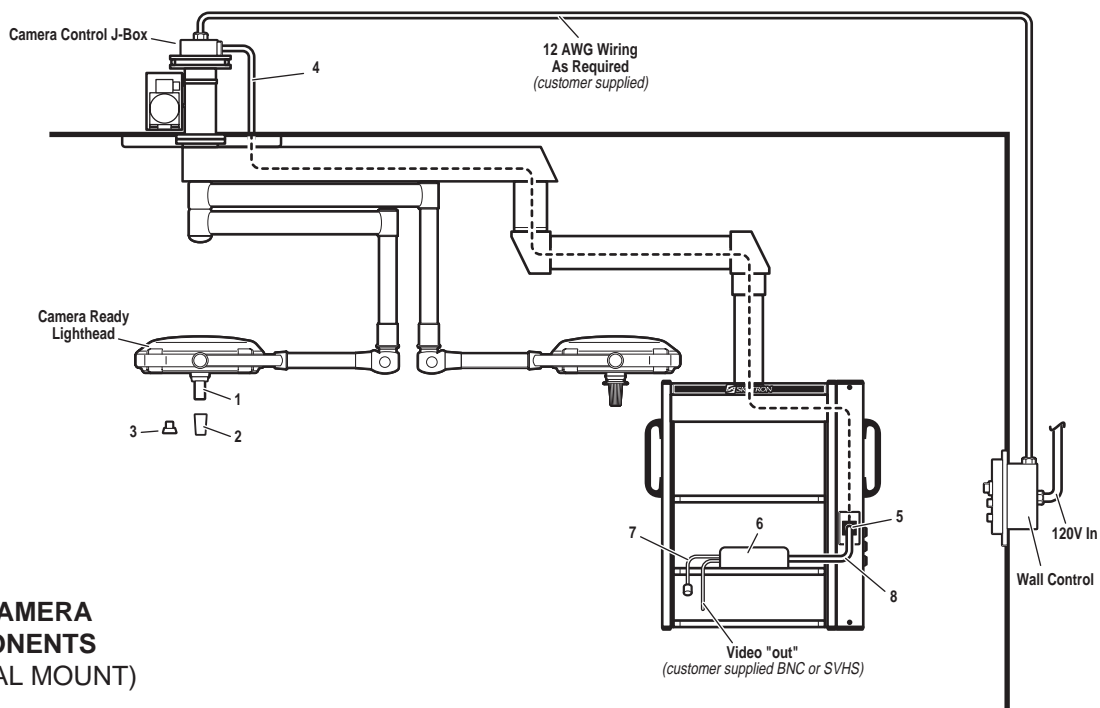
Image Sensor	1/4" IT, Super HAD CCD with Digital Signal Processor (DSP)
Video Signal Out	Composite or SVHS
Picture Elements	768 (H) x 494 (V)
Resolution	470 TV lines
Lens	10x Zoom f=4.2 to 42 mm (F1.8 to F2.9)
Zoom Ratio	40x (10x optical, 4x digital)
Angle of View (H)	Approx. 46 degrees (wide end) to 5.0 degrees (tele end)
Min. Object Distance	10mm (wide end) : 1000mm (tele end)
Iris	Automatic/Manual
Min. Sensitivity	2.0 Lux
S/N Ratio	50dB +
White Balance	Auto
Electronic Shutter	1/1 to 1/10,000 sec., 22 steps
Gain	Auto/Manual (-3 to 28dB, 2dB steps)
AE Control	Auto, Manual, Priority mode, Bright, EV comp. Back light comp.

Connector Faceplate
may be

- Wall mounted
- Installed in a cabinet
- Installed on Skyboom carrier

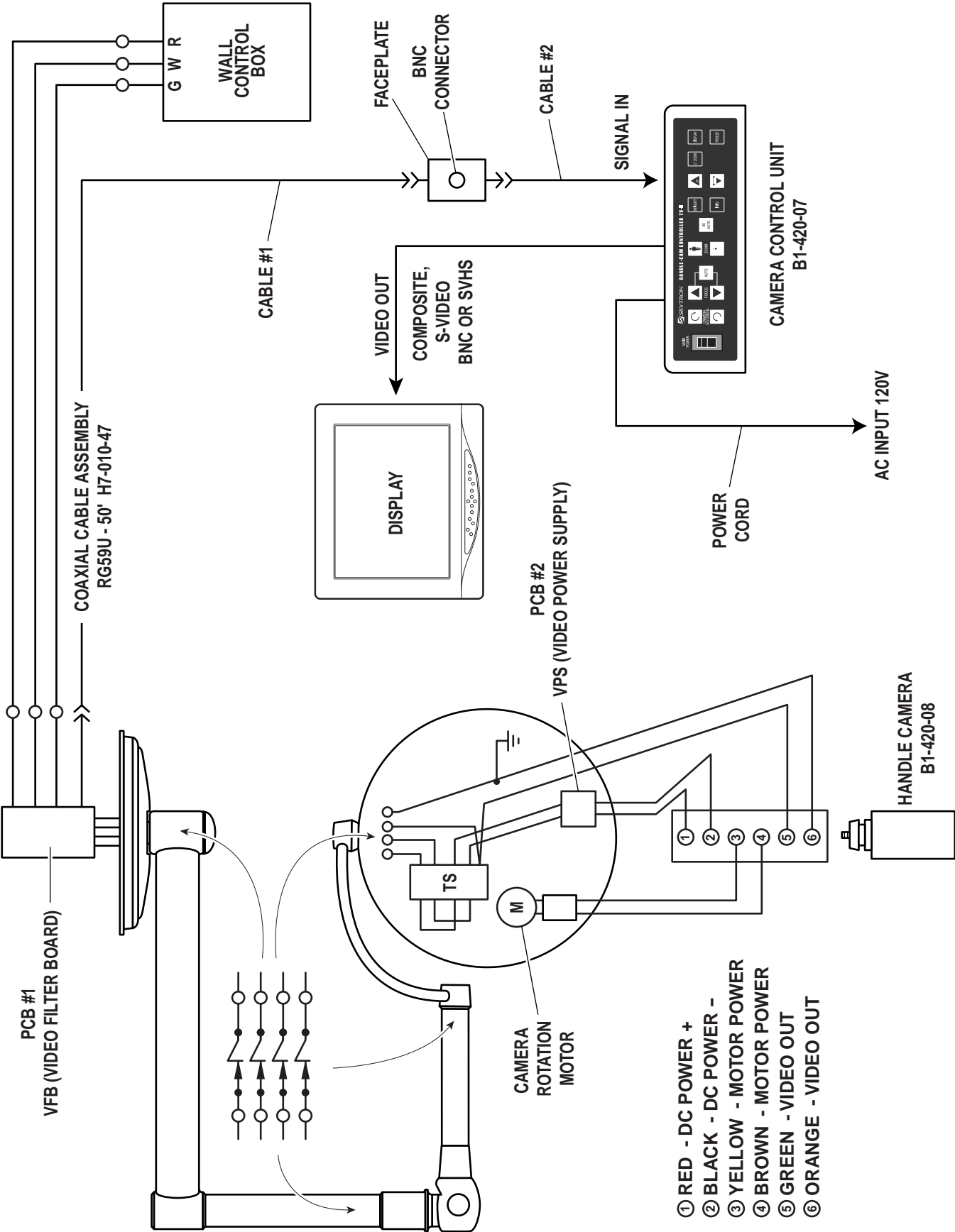


TV-II HANDLE CAMERA SYSTEM COMPONENTS



TV-II HANDLE CAMERA SYSTEM COMPONENTS (SKYBOOM CENTRAL MOUNT)

Item	Part No.	Description	Qty.
1	B1-420-08	CAMERA	1
2	B1-410-76	SLEEVE, sterilizable, camera cover	1
3	B1-420-02	COUNTERWEIGHT	1
4	H7-010-47	CABLE ASSEMBLY, coaxial, RG59, 50 ft.	1
5	B1-420-30	CONNECTOR & FACEPLATE, camera control	1
6	B1-420-07	CAMERA CONTROL UNIT	1
7	B9-211-04	POWER CORD, camera control unit	1
8	H7-010-29	CABLE, coaxial, RG59 (specify length)	SP
	H7-010-23	CONNECTOR, BNC, male	2



DAMAGED SHIPMENT CLAIM PROCEDURE

Whenever a shipment suffers damage while in the custody of the transportation company, the responsibility lies with the transportation company, and the value of the damages can be collected from the transportation company if the proper procedures are followed.

When a shipment is received in a damaged condition and due to the appearance of the containers such as a broken crate, torn wrapping, or smashed carton, the contents may have been damaged. That fact should be noted on the Bill of Lading offered by the transportation company. An example of an applicable statement would be; "Received in good order except as noted" or "Crate damaged, possibility of concealed damage." The addition of these types of statements on the shipping documents will automatically give grounds for starting a claim.

If damage cannot be identified on the exterior of the container, but is found when the container is opened, further unpacking should be stopped immediately and the container with all wrapping or packing materials should be held. The transportation company should be notified so an inspector can be sent. Failure to follow either of these two procedures may result in an inability to file a claim and collect for damage done. Returning the container to the sender without such an inspection may prevent filing a claim, because it will divide the responsibility for damage and in many cases the transportation company will return the shipment to the sender without charge after the inspection.

The claim itself may be filed by either the shipper or consignee, but the consignee must notify the transportation company and the shipper that the damage has occurred. Remember that refusal of the shipment or failure to note the possibility of damage on the shipping documents may jeopardize the claim. Also, acceptance of a damaged shipment which has been processed properly to allow for filing a claim, will not jeopardize the position of the consignee. In any case, SKYTRON will see that damage which is not the fault of the consignee or his agents is corrected, if the transportation company does not honor the claim, as long as SKYTRON receives the full cooperation of the consignee in filing the claim.

Some of the papers needed for filing a claim are in the hands of the consignee after the shipment has been received. If SKYTRON must file a claim, we will request these papers by name from the consignee at such time as the claim is under discussion. We will require the originals of these papers and not copies.

Knowledge of the procedures outlined above and your cooperation in submitting damaged shipment claims will help both you, our customer, and SKYTRON by assuring the integrity of our products from manufacturing to installation.

